

**Notice of Allowability**

Application No.

10/772,323

Examiner

Eric Wendler

Applicant(s)

SATOMI ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment after Final filed on April 10, 2006.
2. ☒ The allowed claim(s) is/are 1-13.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

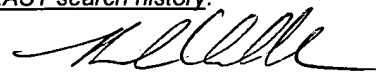
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08);  
Paper No./Mail Date 2/6/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☒ Other Updated EAST search history.



### **DETAILED ACTION**

1. This office action is responsive to the following communications: the Amendment after Final filed on April 10, 2006.
2. Claims 1-13 are pending in the present application. Claims 1 and 11 are independent claims.

#### ***Priority***

3. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. JP 2003-030344, filed on February 7, 2003.

#### ***Response to Arguments***

4. Applicant's arguments, see Amendment after Final, page 2, lines 13-21, filed April 10, 2006, with respect to claim 11 have been fully considered and are persuasive. While the examiner broadly interpreted that booster circuit 150 and transistor QN2 are indeed provided, albeit indirectly, between a voltage supply, the voltage supply is a power supply voltage and not a voltage higher than the power supply voltage. Therefore, the rejection of claim 11 has been withdrawn.

#### ***Allowable Subject Matter***

5. **Claims 1-13 are allowed.**
6. The following is an examiner's statement of reasons for allowance: with regards to claim 1, while the use of a word line drive circuit that includes a drive transistor that is turned ON and OFF by certain circuitry, and voltage or level increasing circuitry to increase after the transistor is turned OFF is known in the art, the prior art does not

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teach using these components with capacitors coupled between a word line and a capacitor drive circuit that switches from low to high when the drive transistor is OFF.

Claims 2-10 are dependent from allowable independent claim 1, and are therefore also allowable.

With regards to claim 11, it is also known in the art that level conversion circuits increase word line voltages by supplying voltages that are higher than a power supply voltage. However, the prior art fails to specifically show, together, a voltage increasing circuit that increases the voltage after the drive circuitry is turned OFF (as opposed to using the voltage increasing circuitry before the word line driver) used in conjunction with a word line driver in which the drive transistor is connected between a positive power supply and a word line, in a similar fashion as the capacitor driving circuit claimed in claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sugawara (5,973,963) and Chung et al. (6,101,126) show structures very similar to the applicant's invention in which word line drivers are used with level conversion circuits that boost the voltage of the word line, but before the signal gets to the word line driver. Arakawa (5,396,459) and Nakamura et al.

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(5,455,789) show structures very similar to the applicant's invention in which word line drivers are used with level conversion circuits that boost the voltage of the word lines after signal is output from the word line driver, but in which the word line driver doesn't have a drive transistor disposed between a positive power supply *and* a word line.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wendler whose telephone number is (571) 272-5063. The examiner can normally be reached on Monday - Friday 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Elms can be reached on (571) 272-1869. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJW  
4/18/06



Eric Wendler